CLAIMS

What is claimed is:

1. Circuitry comprising:

a hybrid to combine signals from a pair of antennas and to provide a sum signal and a difference signal; and

switching circuitry to select between the sum signal and the difference signal based on a signal quality of the sum and difference signals.

2. The circuitry of claim 1 wherein the hybrid has a first antenna port to couple with a first of the antennas, a second antenna port to couple with a second of the antennas, and a first and a second switch port to provide respectively the sum signal and the difference signal,

wherein a signal path between at least some of the ports is a compressed signal path having a plurality of 90-degree bends therein to reduce spacing between the at least some of the ports.

3. The circuitry of claim 1 wherein the hybrid comprises reactive-power dividers associated with a first antenna port and a first switch port,

wherein the hybrid is to provide substantially a predetermined phase difference between the first antenna port and the first switch port, and

wherein the reactive power-dividers associated with the first antenna port and the first switch port are spaced closer than a physical distance associated with the predetermined phase difference in a stripline medium.

4. The circuitry of claim 3 wherein the signal path between the reactive power-dividers comprises the plurality of 90-degree bends to reduce a distance between the reactive power-dividers to less than a distance associated with the predetermined phase difference.

5. The circuitry of claim 2 wherein the hybrid is a 180-degree compact hybrid,

wherein signal paths between ports of the hybrid comprise stripline,

wherein the sum signal comprises signals from the antennas combined substantially in-phase, and

wherein the difference signal comprises signals from the antennas combined substantially out-of-phase.

6. The circuitry of claim 1 wherein the switching circuitry further comprises logic circuitry to compare a packet error rate between the sum and difference signals and to select one of the signals which has a lower packet error rate.

7. The circuitry of claim 6 further comprising transceiver circuitry to measure the packet error rate of the sum and difference signals, and to receive the selected signal from the switching circuitry for subsequent demodulation.

8. The circuitry of claim 7 wherein the signals comprise orthogonal frequency-division multiplexed signals comprising a plurality of orthogonal symbol-modulated subcarriers in a 5 GHz frequency spectrum.

9. The circuitry of claim 7 wherein the signals comprise direct-sequence spread-spectrum modulated signals in a 2.4 GHz spectrum.

10. The circuitry of claim 7 wherein the signals comprise one of either orthogonal frequency-division multiplexed signals comprising a plurality of symbol-modulated subcarriers or complementary code keying-modulated signals, the signals being in a 2.4 GHz frequency spectrum.

11. The circuitry of claim 2 wherein the hybrid is to provide substantially a ¾ wavelength phase difference between the first antenna port and the first switch port,

wherein the hybrid is to provide substantially a ¼ wavelength phase difference between the first antenna port and the second switch port,

wherein the hybrid is to provide substantially a ¼ wavelength phase difference between the second antenna port and the second switch port, and

wherein the hybrid is to provide substantially a ¼ wavelength phase difference between the second antenna port and the first switch port.

12. The circuitry of claim 1 wherein the hybrid is a first hybrid to operate in a first frequency spectrum, and wherein the circuitry further comprises:

a second hybrid to operate in a second frequency spectrum; and

diplexing circuitry to provide signals received through the antennas in the first frequency spectrum to the first hybrid, and to provide signals received through the antennas in the second frequency spectrum to the second hybrid.

13. The circuitry of claim 12 wherein the diplexing circuitry is first diplexing circuitry, wherein the circuitry further comprises second diplexing circuitry, wherein the first hybrid is to provide a first sum signal and a first difference signal in the first frequency spectrum to the second diplexing circuitry, wherein the second hybrid is to provide a second sum signal and a second difference signal in the second frequency spectrum to the second diplexing circuitry, and

wherein the second diplexing circuitry is to combine the first and second sum signals and the first and second difference signals to provide to the switching circuitry a combined sum signal and a combined difference signal, the combined sum and difference signals comprising frequencies in the first and second frequency spectrums.

14. The circuitry of claim 12 wherein the switching circuitry is first switching circuitry and wherein the circuitry further comprises second switching circuitry,

wherein the first hybrid is to provide a first sum signal and a first difference signal in the first frequency spectrum to the first switching circuitry, and the second hybrid is to provide a second sum signal and a second difference signal in the second frequency spectrum to the second switching circuitry, and

wherein the second switching circuitry is to select either the second sum signal or the second difference signal based on a signal quality of the second sum and difference signals.

15. The circuitry of claim 14 wherein the first switching circuitry is to provide either the sum or the difference signal in the first frequency spectrum to a first transceiver to process signals from the first frequency spectrum, and

wherein the second switching circuitry is to provide either the sum or the difference signal in the second frequency spectrum to a second transceiver to process signals from the second frequency spectrum.

16. The circuitry of claim 12 wherein the signals comprise orthogonal frequency-division multiplexed signals comprising a plurality of symbol-modulated subcarriers, and

wherein the first frequency spectrum is a 5 GHz frequency spectrum and the second frequency spectrum is a 2.4 GHz frequency spectrum.

17. A method comprising:

generating a sum signal and a difference signal with a hybrid from a pair of antennas; and

selecting between the sum signal and the difference signal based on a packet error rate of the signals.

18. The method of claim 17 wherein the generating comprises providing substantially a predetermined phase difference between a first antenna port and a first switch port of the hybrid, wherein a signal path between reactive power-dividers associated with the ports comprises a plurality of 90-degree bends to reduce a distance between the reactive power-dividers to less than a distance associated with the predetermined phase difference.

19. The method of claim 18 further comprising:

measuring the packet error rate of the sum signal and the difference signal;

comparing the measured packet error rates; and

demodulating the selected signal,

wherein the signals comprise orthogonal frequency-division multiplexed signals comprising a plurality of symbol-modulated subcarriers in a predetermined frequency spectrum, the predetermined frequency spectrum comprising either a 5 GHz frequency spectrum or a 2.4 GHz frequency spectrum.

20. The method of claim wherein 19 the generating comprises:

generating a first sum signal and a first difference signal in a first frequency spectrum with a first hybrid from a pair of antennas;

generating a second sum signal and a second difference signal in a second frequency spectrum with a second hybrid from the pair of antennas; and

separating the signals received through the pair of antennas into signals of the first and second frequency spectrums prior to generating the sum and difference signals, and

wherein the selecting comprises selecting between either the first sum signal and the first difference signal, or the second sum signal and the second difference signal.

21. The method of claim 20 further comprising combining the first and second sum signals and the first and second difference signals prior to demodulating.

22. A hybrid comprising:

four reactive power-dividers; and

signal paths coupling the reactive power-dividers to provide a predetermined phase difference therebetween,

wherein the signal paths have a plurality of 90-degree bends therein to reduce a distance between the coupled reactive power-dividers to less than a distance associated with the predetermined phase difference.

23. The hybrid of claim 22 wherein the hybrid is a 180-degree hybrid fabricated in either a stripline or microstrip medium and is to combine signals from a pair of antennas to provide a sum signal and a difference signal,

wherein the hybrid further comprises:

a first antenna port to couple with a first of the antennas;

a second antenna port to couple with a second of the antennas; and

first and second switch ports to provide, respectively, the sum signal and the difference signal, the sum signal comprising signals from the antennas combined substantially in-phase, the difference signal comprising signals from the antennas combined substantially out-of-phase.

24. The hybrid of claim 23 wherein the signals comprise orthogonal frequency-division multiplexed signals comprising a plurality of symbol-modulated subcarriers in a predetermined frequency spectrum, the predetermined frequency spectrum comprising either a 5 GHz frequency spectrum or a 2.4 GHz frequency spectrum,

wherein the hybrid is to provide substantially a ¾ wavelength phase difference between the first antenna port and the first switch port,

wherein the hybrid is to provide substantially a ¼ wavelength phase difference between the first antenna port and the second switch port,

wherein the hybrid is to provide substantially a ¼ wavelength phase difference between the second antenna port and the second switch port, and

wherein the hybrid is to provide substantially a ¼ wavelength phase difference between the second antenna port and the first switch port.

25. A wireless communication device comprising:

a pair of substantially omnidirectional antennas;

a hybrid to receive signals from the pair of antennas and to provide a sum signal and a difference signal; and

switching circuitry to select between either the sum signal or the difference signal based on a signal quality of the sum and difference signals.

26. The device of claim 25 wherein the hybrid has a first antenna port to couple with a first of the antennas, a second antenna port to couple with a second of the antennas, and a first and a second switch port to provide respectively the sum signal and the difference signal,

wherein the hybrid has a reactive power-divider associated with the ports and is to provide a predetermined phase difference between the ports,

wherein a signal path between the reactive power-dividers comprise 90-degree bends to reduce a distance between the reactive power-dividers to less than a distance associated with the predetermined phase difference, and

wherein the switching circuitry further comprises logic circuitry to compare a packet error rate between the sum and difference signals and to select one of the signals having lower packet error rate.

27. The device of claim 25 wherein the signals comprise orthogonal frequency-division multiplexed signals comprising a plurality of symbol-modulated subcarriers in a predetermined frequency spectrum, the predetermined frequency spectrum comprising either a 5 GHz frequency spectrum or a 2.4 GHz frequency spectrum, and

wherein the device further comprises transceiver circuitry to measure the packet error rate of the sum and difference signals, and to receive the selected signal from the switching circuitry for subsequent demodulation.

28. An article comprising a storage medium having stored thereon instructions, that when executed by a computing platform, result in selecting between a sum signal and a difference signal based on a packet error rate of the signals, the sum signal and the difference signal being generated with a hybrid from a pair of antennas.

29. The article of claim 28 wherein the instructions, when further executed by the computing platform result in further selecting between the sum signal and the difference signal,

wherein the signals are generated by providing substantially a predetermined phase difference between at least some ports of the hybrid, and

wherein a signal path between reactive power-dividers associated with the ports comprises a plurality of 90-degree bends to reduce a distance between the reactive power-dividers to less than a distance associated with the predetermined phase difference.

30. The article of claim 29 wherein the instructions, when further executed by the computing platform result in:

measuring the packet error rate of the sum signal and the difference signal;

comparing the measured packet error rates; and

demodulating the selected signal,

wherein the signals comprise orthogonal frequency-division multiplexed signals comprising a plurality of symbol-modulated subcarriers in a predetermined frequency spectrum, the predetermined frequency spectrum comprising either a 5 GHz frequency spectrum or a 2.4 GHz frequency spectrum.